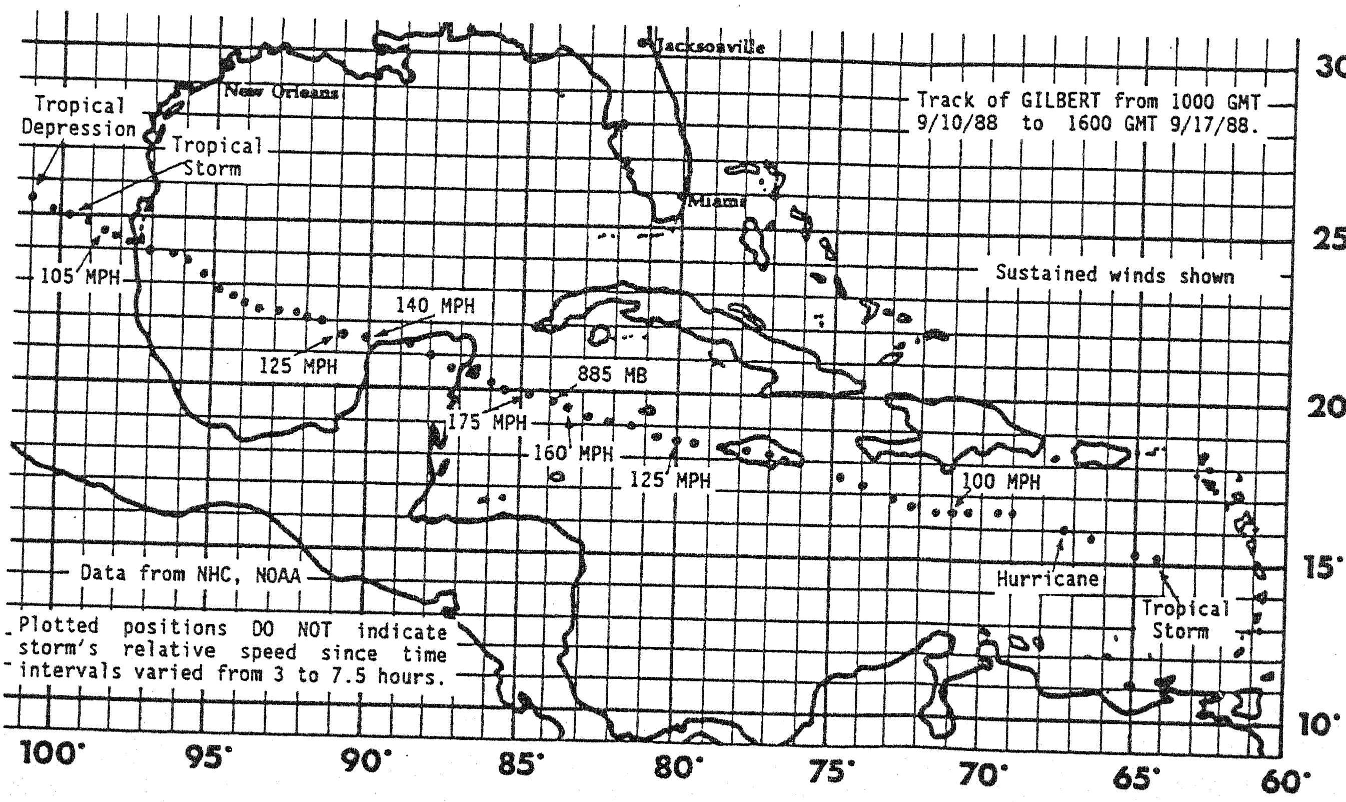
CLIMATE ANALYSIS CENTER

WEEKLY CLIMATE BULLETIN

No. 88/38 Washington, DC September 17, 1988



HURRICANE GILBERT, THE MOST INTENSE STORM ON RECORD IN THE WESTERN HEMISPHERE IN TERMS OF LOWEST BAROMETRIC PRESSURE (885 MB., OR 26.13 INCHES), WITH TORRENTIAL RAINFALL AND SUSTAINED WINDS OF 175 MPH AND GUSTS OF MORE THAN 200 MPH, BATTERED THE DOMINICAN REPUBLIC, HAITI, JAMAICA, THE CAYMAN ISLANDS, AND MEXICO'S YUCATAN PENINSULA AND NORTHEASTERN COASTAL REGIONS LAST WEEK.

UNITED STATES DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)
NATIONAL WEATHER SERVICE - NATIONAL METEOROLOGICAL CENTER

WEEKLY CLIMATE BULLETIN

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This Bulletin is issued weekly by the Climate Analysis Center and is designed to indicate, in a brief, concise format, current surface climatic conditions in the United States and around the world. The Bulletin contains:

Highlights of major global climatic events and anomalies.
U.S. climatic conditions for the previous week.
U.S. apparent temperatures (summer) or wind chill (winter).
Global two-week temperature anomalies.
Global four-week precipitation anomalies.
Global monthly temperature and precipitation anomalies.
Global three-month precipitation anomalies (once a month).
Global twelve-month precipitation anomalies (every 3 months).
Global temperature anomalies for winter and summer seasons.
Special climate summaries, explanations, etc. (as appropriate).

Most analyses contained in this Bulletin are based on preliminary, unchecked data received at the Center via the Global Telecommunication System. Similar analyses based on final, checked data are likely to differ to some extent from those presented here.

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WEEKLY CLIMATE BULLETIN
Climate Analysis Center, W/NMC53
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Washington, DC 20233

GLOBAL HIGHLIGHTS

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF SEPTEMBER 17, 1988
(Approximate duration of anomalies is in brackets.)

1. North Central United States:
DRY CONDITIONS PERSIST.
Little or no precipitation fell in much of the north central United States where very dry conditions continued. See U.S. Weekly Weather Highlights [27 weeks].

2. Western United States:
HEAT WAVE ENDS.
Near normal to below normal temperatures brought relief from the very hot conditions of past weeks. See U.S. Weekly Weather Highlights [Ended at 3 weeks].

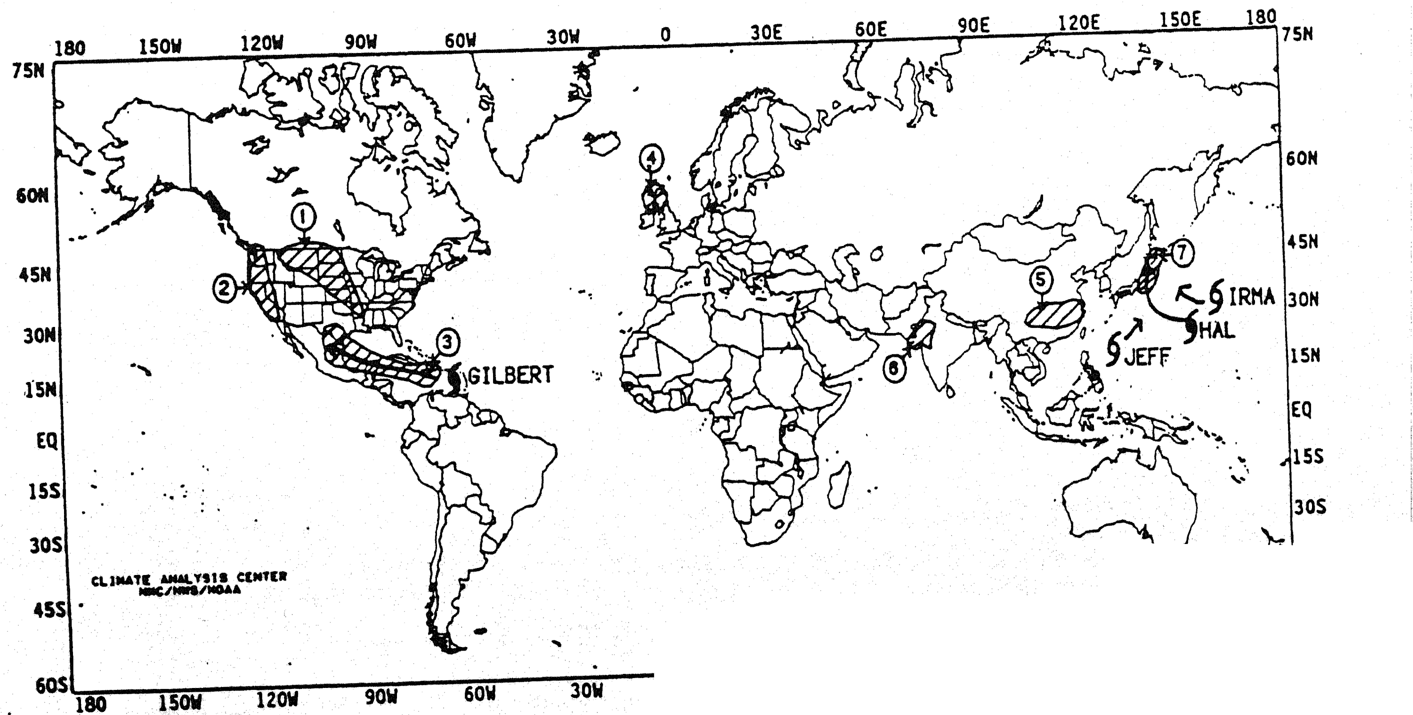
3. Gulf of Mexico:
HURRICANE GILBERT LASHES AREA.
One of the strongest hurricanes of the century, Gilbert, brought very high winds and heavy rains to Jamaica, the Cayman Islands, the Yucatan Peninsula, and northeastern Mexico. As much as 231.2 (9.10 inches) of rain was reported. See Front Cover (for hurricane track) and U.S. Weekly Highlights [Episodal Event].

4. Scotland:
WET WEATHER EASES.
Light rain, up to 11.4 mm (0.45 inches), was reported by many stations in Scotland as wet conditions diminished [Ending at 11 weeks].

5. Central China:
REGION REMAINS WET.
As much as 90.4 mm (3.56 inches) of rain fell at stations in the interior of central and eastern China [7 weeks].

6. India:
HIGH TEMPERATURES CONTINUE.
Unusually hot conditions, with temperatures as much as 3.3°C (5.9°F) above normal, persisted at many locations in northwestern India [3 weeks].

7. Japan:
HEAVY RAINS REPORTED.
As much as 157.0 mm (6.18 inches) of rain occurred at stations on the east coast of Japan as Typhoon Hal moved across the area [Episodal Event].



Approximate locations of the major anom
this map. See other maps in this Bullet
four week precipitation anomalies, long

U.S. WEEKLY WEATHER HIGHLIGHTS

FOR THE WEEK OF SEPTEMBER 11 THROUGH SEPTEMBER 17, 1988.

Heavy showers and thunderstorms inundated portions of the Southeast, Ohio Valley, and the central and southern Great Plains (see Table 1). Hurricane Gilbert, after lashing the southern and western Caribbean Islands and Mexico's Yucatan Peninsula with high winds and torrential rains, made its second and final landfall in northeastern Mexico late in the week, approximately 120 miles south of Brownsville, TX (see front cover and Table 4 for further information). According to the River Forecast Centers, between 3 and 6 inches of rain from Gilbert fell on southern Texas, causing some flash flooding, especially in the middle and lower Rio Grande Valleys. Farther north, severe thunderstorms preceding a strong cold front dumped heavy rains (between 3 and 7 inches) on northern Texas, central Oklahoma, eastern Kansas, western Missouri, and eastern Nebraska. In the Southeast, abundant tropical moisture and a stationary front triggered copious rainfall (up to 10.9 inches) in most of eastern Mississippi and Louisiana, Alabama, northwestern Georgia, central Tennessee, and southern Kentucky (see Figure 1). Elsewhere, heavy precipitation totals were measured in sections of western Colorado, southern Ohio, northern West Virginia, southwestern Pennsylvania, and southeastern Alaska. Light to moderate amounts occurred in the majority of the eastern three-quarters of the nation, while little or no precipitation was observed in much of the normally dry Far West (west of the Rockies), and at scattered stations in the northern Great Plains, the eastern halves of Texas and Florida, and along the Carolina coasts.

Warmer weather shifted eastward from the western U.S. into the nation's midsection as weekly temperatures averaged 6-8^{o}F above normal in the central Great Plains and middle Mississippi Valley (see Table 2). Highs generally remained under 100^{o}F throughout most of the country except in central Texas and the normally hot desert Southwest (see Figure 2), but readings in the nineties broke several daily record maximum temperatures in the Midwest during the week. Slightly above normal temperatures were reported from North Dakota southward into Texas, along the Gulf Coast, in most of the Southeast, throughout the western Great Lakes region, and in much of Alaska. In contrast, cooler conditions persisted in the western third of the U.S. and in New England and along the mid-Atlantic Coast. Largest negative departures (between -6 and -9^{o}F) were found in parts of the central Rockies, interior Pacific Northwest, and northern New England (see Table 3). The combination of moderate precipitation and below normal temperatures significantly improved conditions for the containment of wildfires in the northern Rockies.

TABLE 1. Selected stations with more than two and one-half inches of precipitation for the week.

Huntsville, AL	5.87	Pensacola NAS, FL	3.34
Milton/Whiting NAS, FL	5.74	Muscle Shoals, AL	3.33
Kansas City/International, MO	5.66	Memphis NAS, TN	3.24
Brownsville, TX	5.38	Dayton, OH	3.09
Birmingham, AL	5.26	Sioux City, IA	3.02
Pensacola, FL	5.17	Tucumcari, NM	2.99
Crestview, FL	4.98	Kingsville NAS, TX	2.85
Columbus AFB, MS	4.82	Baton Rouge, LA	2.85
Kansas City/Municipal, MO	4.77	Jackson, KY	2.82
McAllen, TX	4.63	Corpus Christi, TX	2.76
Mobile, AL	4.45	London/Corbin, KY	2.74
Yakutat, AK	4.44	Gage, OK	2.68
Beeville NAS, TX	4.32	Fort Worth/Carswell AFB, TX	2.67
Wichita Falls, TX	3.97	San Antonio/Kelly AFB, TX	2.64
Chattanooga, TN	3.77	Biloxi/Keesler AFB, MS	2.63
Anniston, AL	3.64	Tuscaloosa, AL	2.60
Jonesboro, AR	3.54	Columbus/Lockbourne AFB, OH	2.59
New Orleans/Lake Front, LA	3.42	Fort Worth/Meacham AFB, TX	2.55

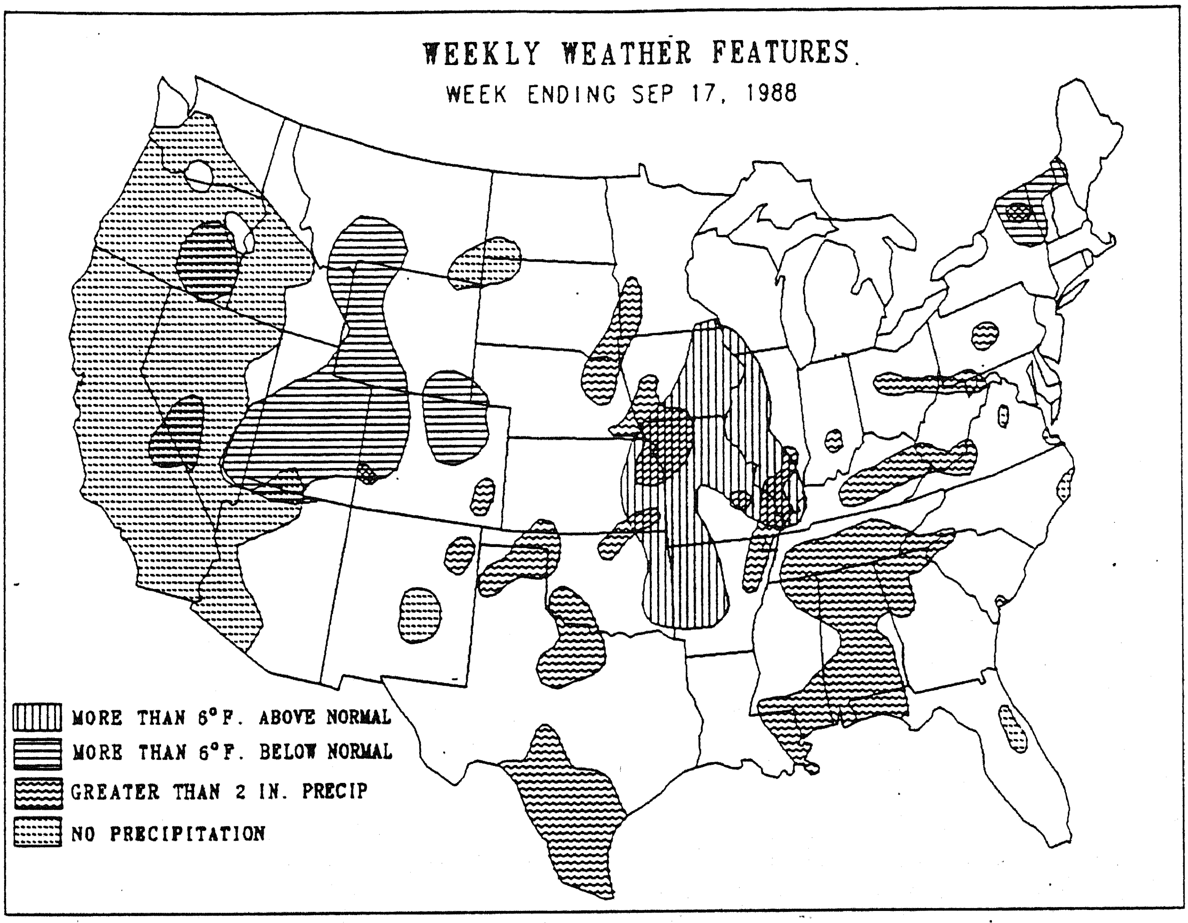


TABLE 2. Selected stations with temperatures averaging greater than 5°F ABOVE normal for the week.

Station	TDepNml	AvgT(°F)	Station	TDepNml	AvgT(°F)
St. Louis, MO	+8	78	Memphis, TN	+6	81
Fort Smith, AR	+7	81	McAlester, OK	+6	80
Belleville/Scott AFB, IL	+7	77	Chanute, KS	+6	77
Fayetteville, AR	+7	77	Joplin, MO	+6	77
Columbia, MO	+7	76	Kansas City/Muni., MO	+6	77
Quincy, IL	+7	74	Paducah, KY	+6	77
Peoria, IL	+7	73	Topeka, KS	+6	75
Burlington, IA	+7	73	Springfield, IL	+6	74
Ottumwa, IA	+7	73	Moline, IL	+6	71
Waterloo, IA	+7	69	Des Moines, IA	+6	71
Orlando, FL	+6	87	La Crosse, WI	+6	68

TABLE 3. Selected stations with temperatures averaging greater than 5°F BELOW normal for the week.

Station	TDepNml	AvgT(°F)	Station	TDepNml	AvgT(°F)
Cedar City, UT	-9	55	Laramie, WY	-6	48
Delta, UT	-9	56	Bozeman, MT	-6	49
Grand Junction, CO	-9	59	Rock Springs/Sweetwater,WY	-6	50
Cheyenne, WY	-8	50	Casper, WY	-6	53
Lander, WY	-8	51	Burlington, VT	-6	53
Burns, OR	-8	51	Elko, NV	-6	53
Sidney, NE	-8	53	Massena, NY	-6	53
Billings, MT	-7	53	Winnemucca, NV	-6	54
Denver, CO	-7	56	Glens Falls, NY	-6	54
Poughkeepsie, NY	-7	56	Salt Lake City, UT	-6	59
Atlantic City, NJ	-7	61	Wrightstown/McGuire AFB,NJ	-6	62
Mt. Washington, NH	-6	35			

TABLE 4. Meteorological information for Gilbert from 1000 GMT September 10 through 1600 GMT September 17, 1988.

Date / Time (Sep) (GMT)	Position (Lat/Lon)	Central Pressure (Mb)	Wind (MPH) Sustained	Gust
10 / 1000	15.1N / 64.2W	***	40	58
10 / 1600	15.2N / 65.0W	***	60	75
10 / 2200	15.8N / 66.5W	988	70	86
11 / 0230	16.0N / 67.3W	984	75	86
11 / 1000	16.5N / 69.0W	980	80	90
11 / 1300	16.5N / 69.5W	977	95	***
11 / 1600	16.5N / 70.5W	977	95	109
11 / 1900	16.5N / 71.0W	971	100	***
11 / 2200	16.5N / 71.5W	967	100	120
12 / 0100	16.8N / 72.2W	965	100	115
12 / 0400	16.9N / 72.9W	965	100	115
12 / 0700	17.3N / 74.0W	963	110	115
12 / 1000	17.5N / 74.7W	963	110	115
12 / 1600	18.0N / 76.7W	***	115	138
12 / 1900	18.1N / 77.0W	***	115	140
12 / 2200	18.3N / 77.8W	***	115	140
13 / 0100	18.4N / 78.6W	***	115	140
13 / 0400	18.5N / 79.5W	964	115	138
13 / 0700	18.6N / 80.0W	949	125	140
13 / 1000	18.8N / 80.6W	943	130	145
13 / 1300	19.0N / 81.5W	934	130	145
13 / 1600	19.1N / 82.1W	922	140	160
13 / 1900	19.3N / 82.8W	903	160	***
13 / 2200	19.5N / 83.5W	885	160	184
14 / 0100	19.7N / 83.9W	890	175	***
14 / 0400	19.9N / 84.8W	890	175	200
14 / 0700	20.0N / 85.6W	894	175	200
14 / 1000	20.2N / 86.0W	***	175	200
14 / 1300	20.4N / 86.6W	891	175	200
14 / 1600	20.7N / 87.3W	891	160	184
14 / 1900	21.0N / 88.0W	***	160	185
14 / 2200	21.3N / 88.8W	***	140	160
15 / 0100	21.5N / 90.2W	944	125	150
15 / 0400	21.5N / 90.2W	948	125	150
15 / 0700	21.6N / 90.8W	949	125	150
15 / 1000	22.0N / 91.5W	950	125	140
15 / 1300	22.1N / 92.0W	950	120	144
15 / 1600	22.2N / 92.3W	950	120	144
15 / 1900	22.3N / 92.9W	952	120	144
15 / 2200	22.4N / 93.6W	948	120	144
16 / 0100	22.6N / 94.0W	949	120	150
16 / 0400	22.8N / 94.4W	949	120	150
16 / 0700	22.9N / 94.8W	949	120	150
16 / 1000	23.3N / 95.4W	946	120	150
16 / 1300	23.8N / 95.9W	948	120	150
16 / 1600	23.9N / 96.4W	948	120	144
16 / 1900	24.0N / 97.1W	948	120	144
16 / 2200	24.2N / 97.8W	954	120	144
17 / 0100	24.4N / 98.1W	954	110	144
17 / 0400	24.6N / 98.6W	955	105	120
17 / 0700	24.9N / 99.1W	***	80	***
17 / 1000	25.0N / 99.8W	***	65	***
17 / 1300	25.1N /100.3W	***	50	***
17 / 1600	25.5N /101.0W	***	35	***

(Note: Unavailable information denoted by asterisks).

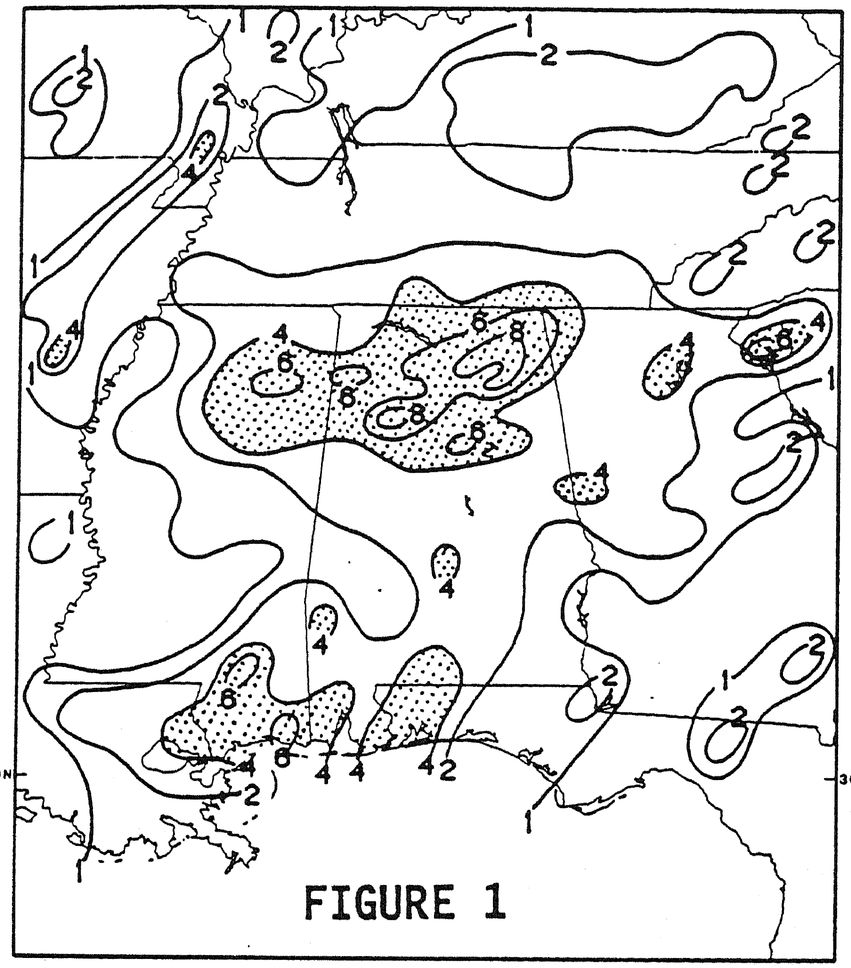
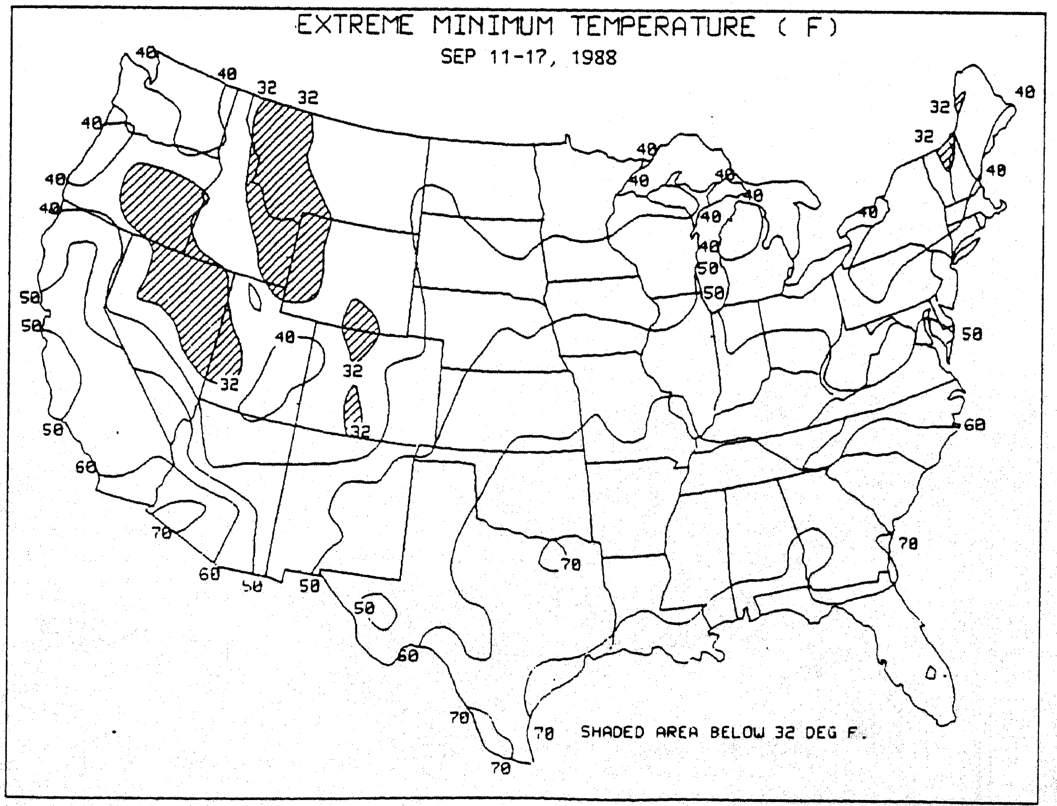


Figure 1. Total precipitation (inches) during Sep. 11-17, 1988. Only isopleths of 1, 2, 4, 6, and 8 inches are shown, and stippled areas are greater than 4 inches. Portions of the Southeast received over 8 inches of rain in association with abundant tropical moisture and a stationary front.



Cold weather covered much of the Rockies, Great Basin, and northern New England regions last week as temperatures in the area dipped below freezing.

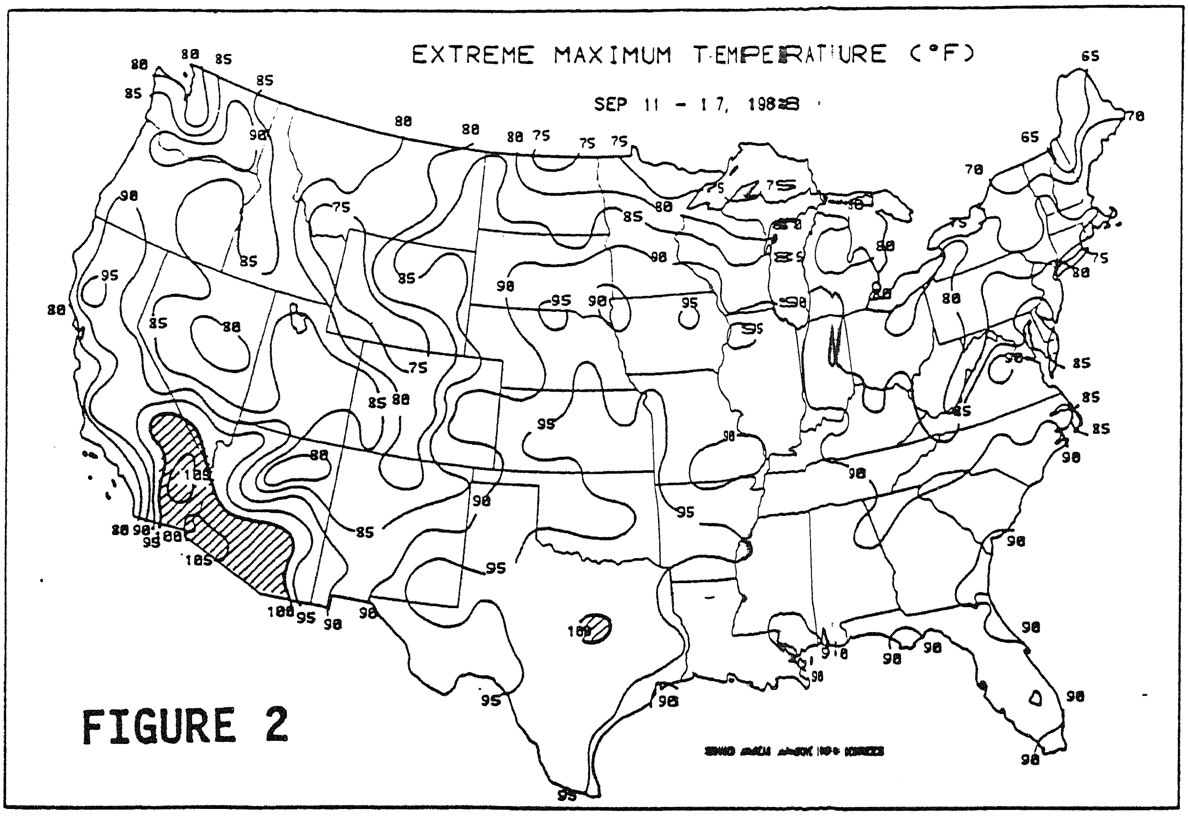
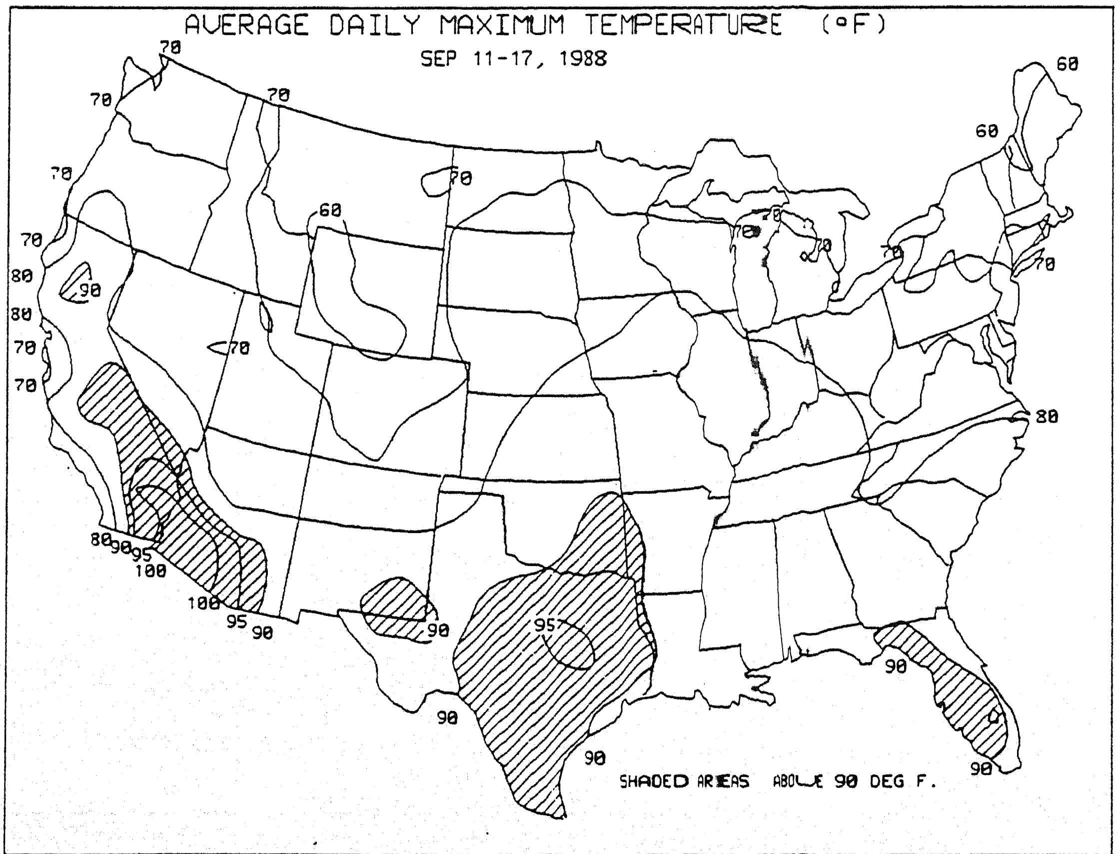
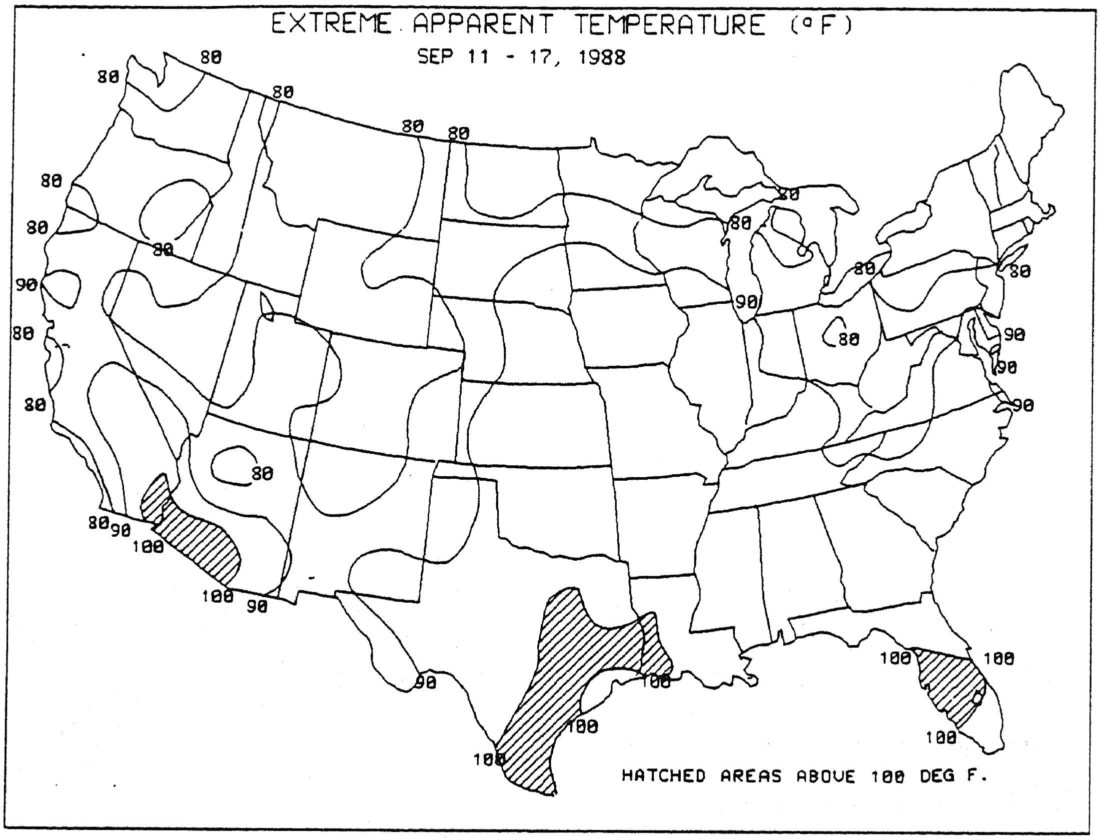


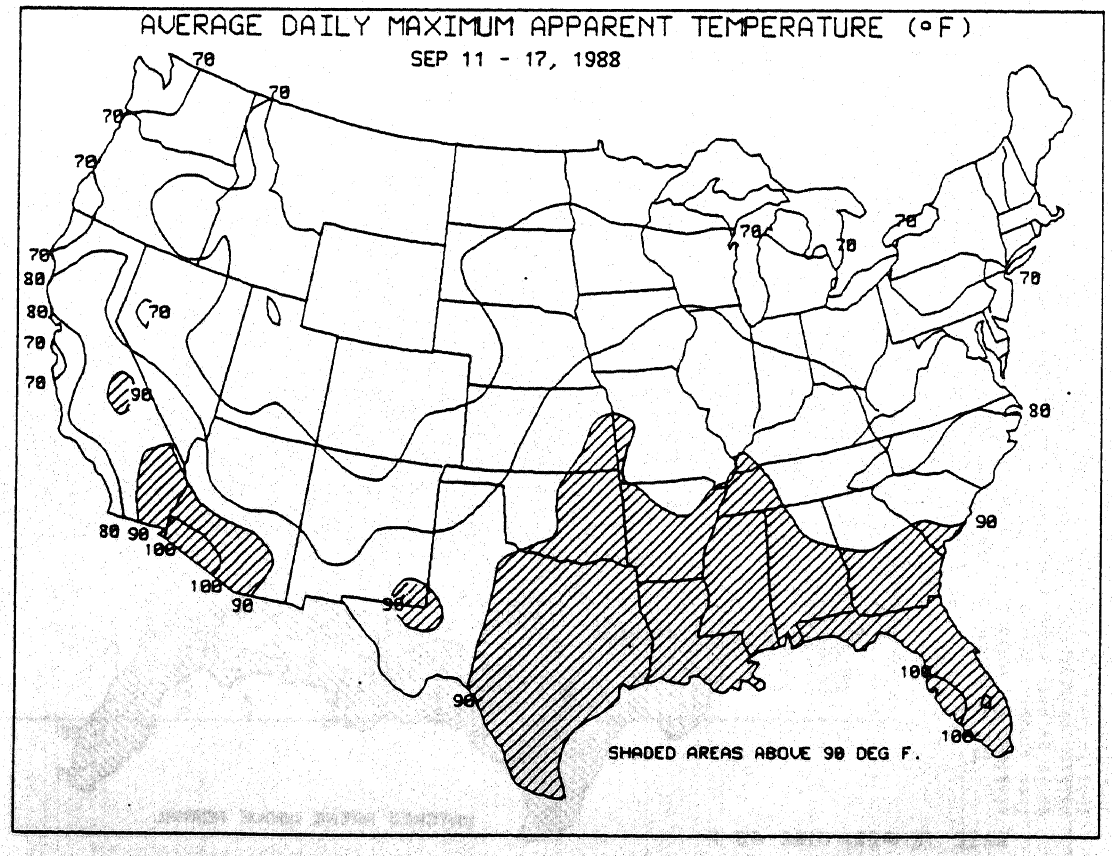
FIGURE 2

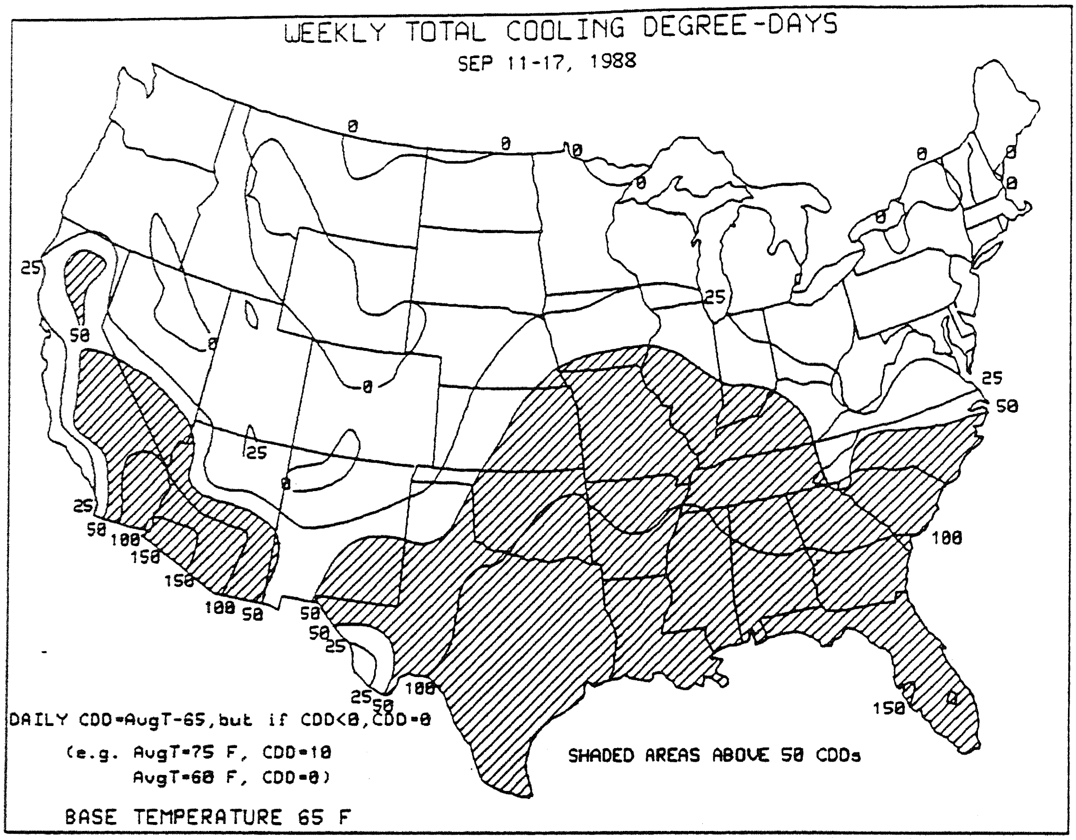
Highs exceeding 100^{o}F were limited to the normally hot desert Southwest and in central Texas, while nineties were common in the nation's midsection (top); daily maximum temperatures averaged more than 90^{o}F in parts of the southern U.S. (bottom).



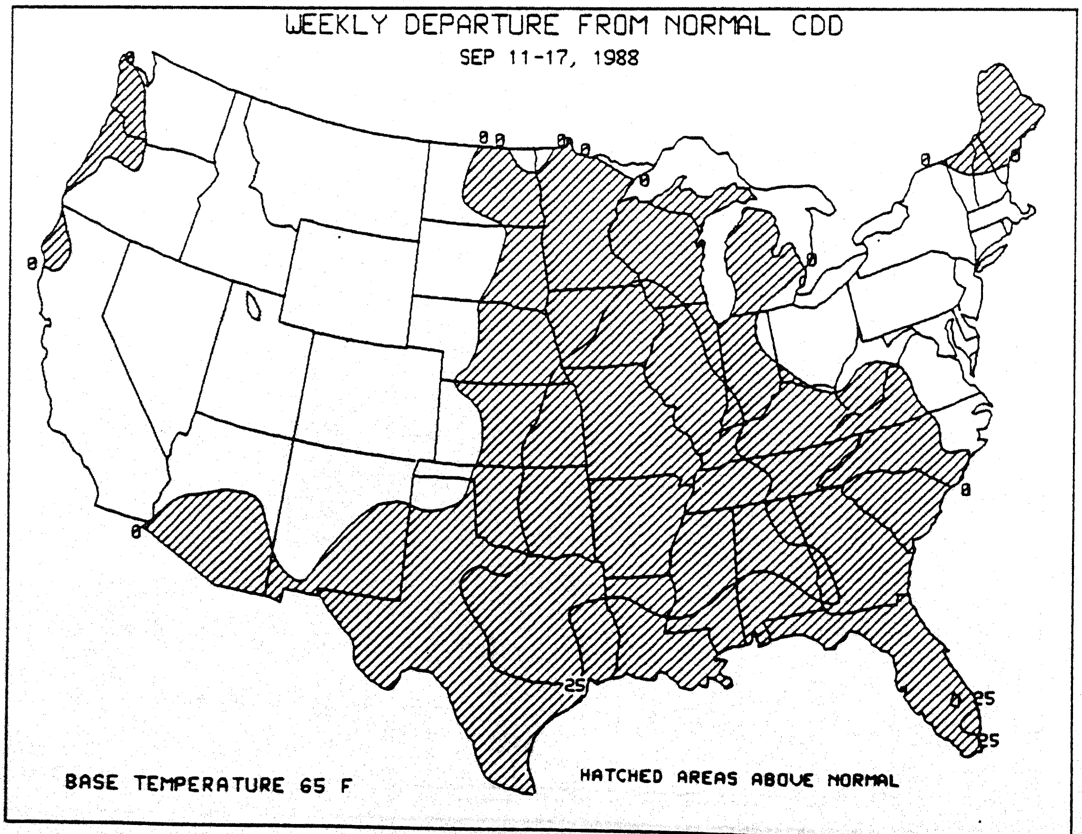


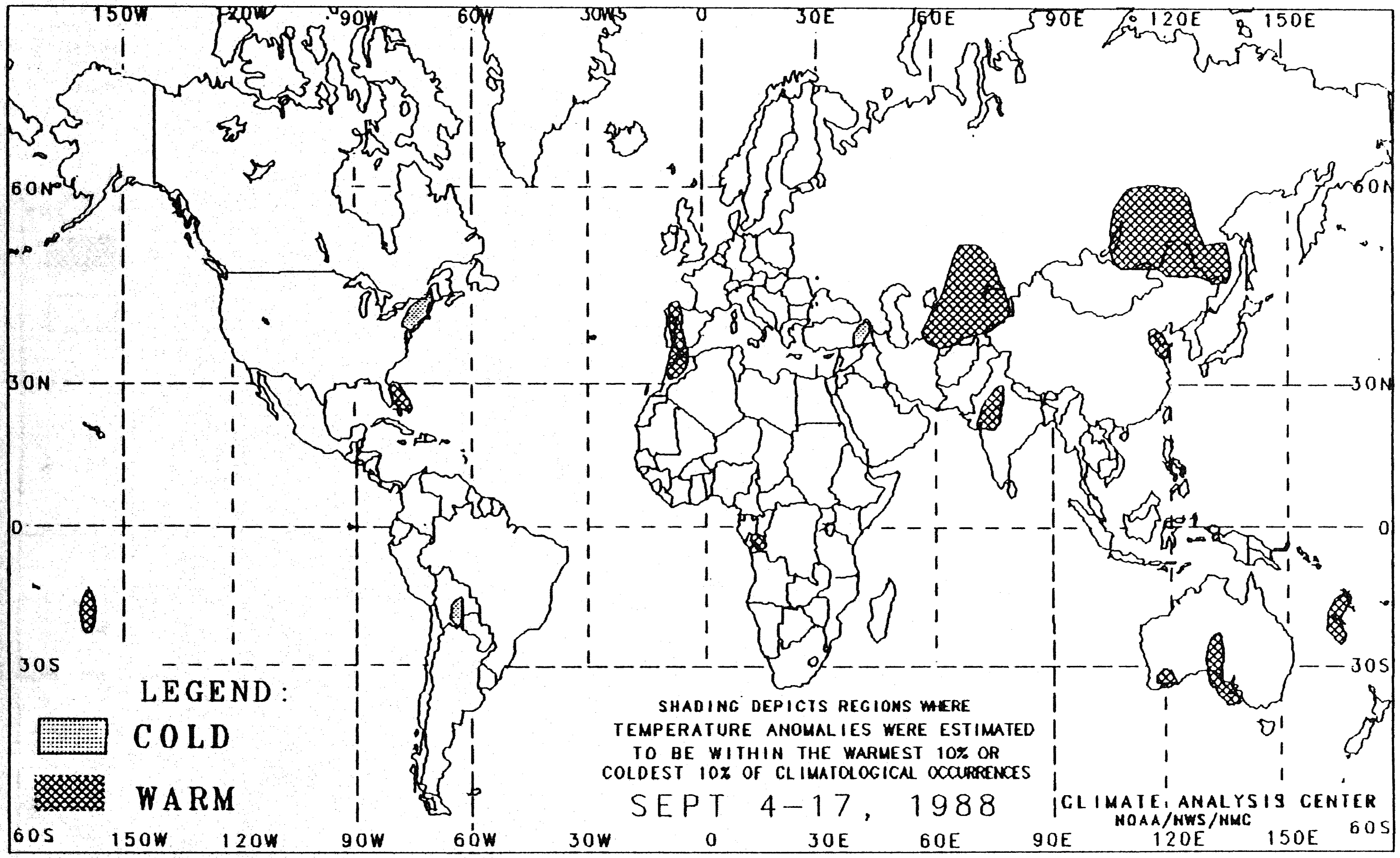
Dangerous apparent temperatures occurred at least once last week in parts of Florida, Texas, and the desert Southwest (top), while much of the Southeast endured uncomfortable mid-afternoon temperatures during the week (bottom).





Cooling degree day totals over 100 were confined to the desert Southwest and the Southeast (top); cooler weather in the western and northeastern U.S. lessened the area's normal weekly air-conditioning demand while above normal temperatures in the nation's midsection increased the region's CDD demand by 25-50% (bottom).





The anomalies on this chart are based on approximately 2500 observing stations for which at least 13 days of temperature observations were received from synoptic reports. Many stations do not operate on a twenty-four hour basis so many night time observations are not taken. As a result of these missing observations the estimated minimum temperature may have a warm bias. This in turn may have resulted in an overestimation of the extent of some warm anomalies.

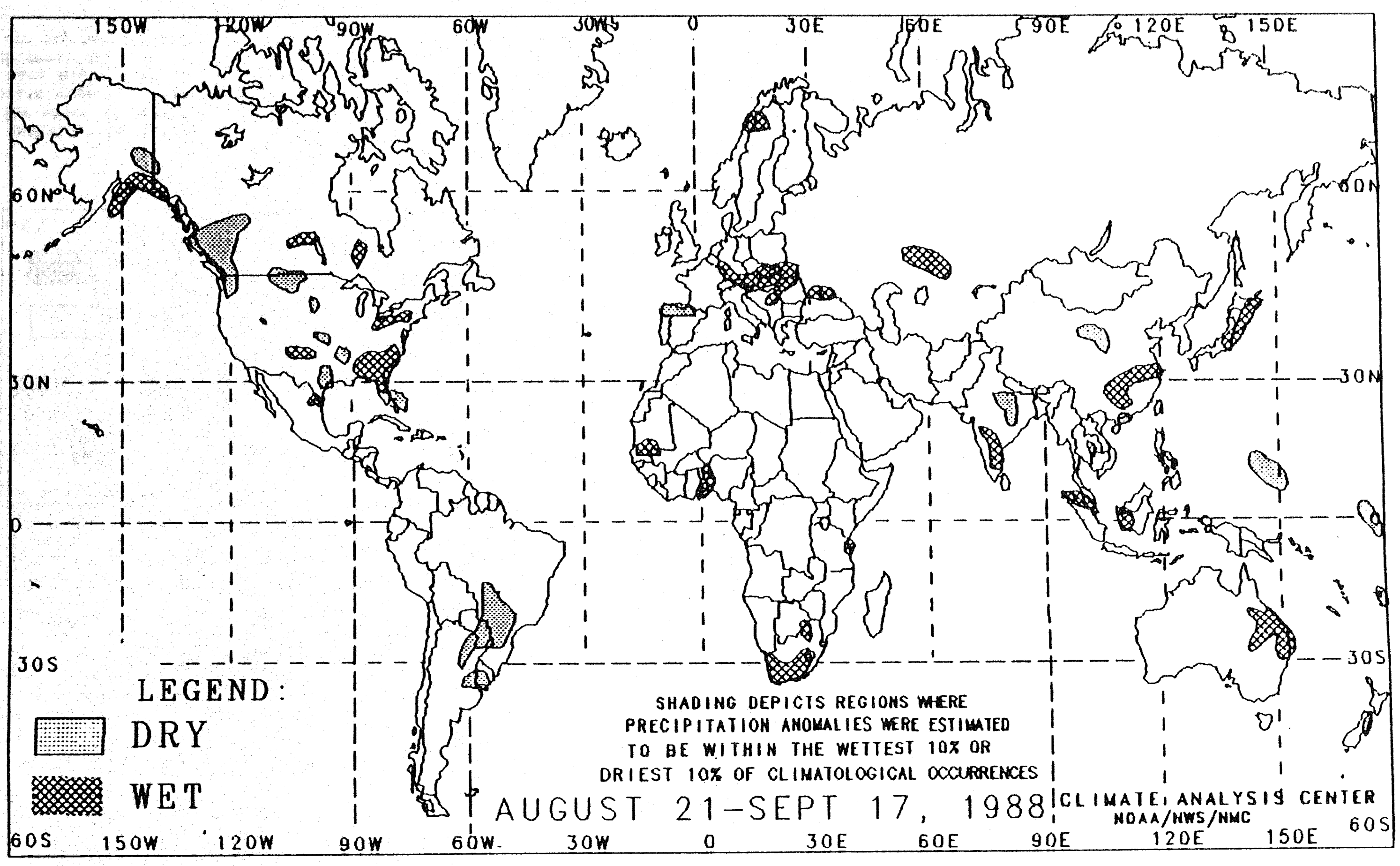
Temperature anomalies are not depicted unless the magnitude of temperature departures from normal exceeds 1.5°C.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data is insufficient for determining precentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of two week temperature anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

GLOBAL PRECIPITATION ANOMALIES

4 WEEKS



The anomalies on this chart are based on approximately 2500 observing stations for which at least 27 days of precipitation observations (including zero amounts) were received or estimated from synoptic reports. As a result of both missing observations and the use of estimates from synoptic reports (which are conservative), a dry bias in the total precipitation amount may exist for some stations used in this analysis. This in turn may have resulted in an overestimation of the extent of some dry anomalies.

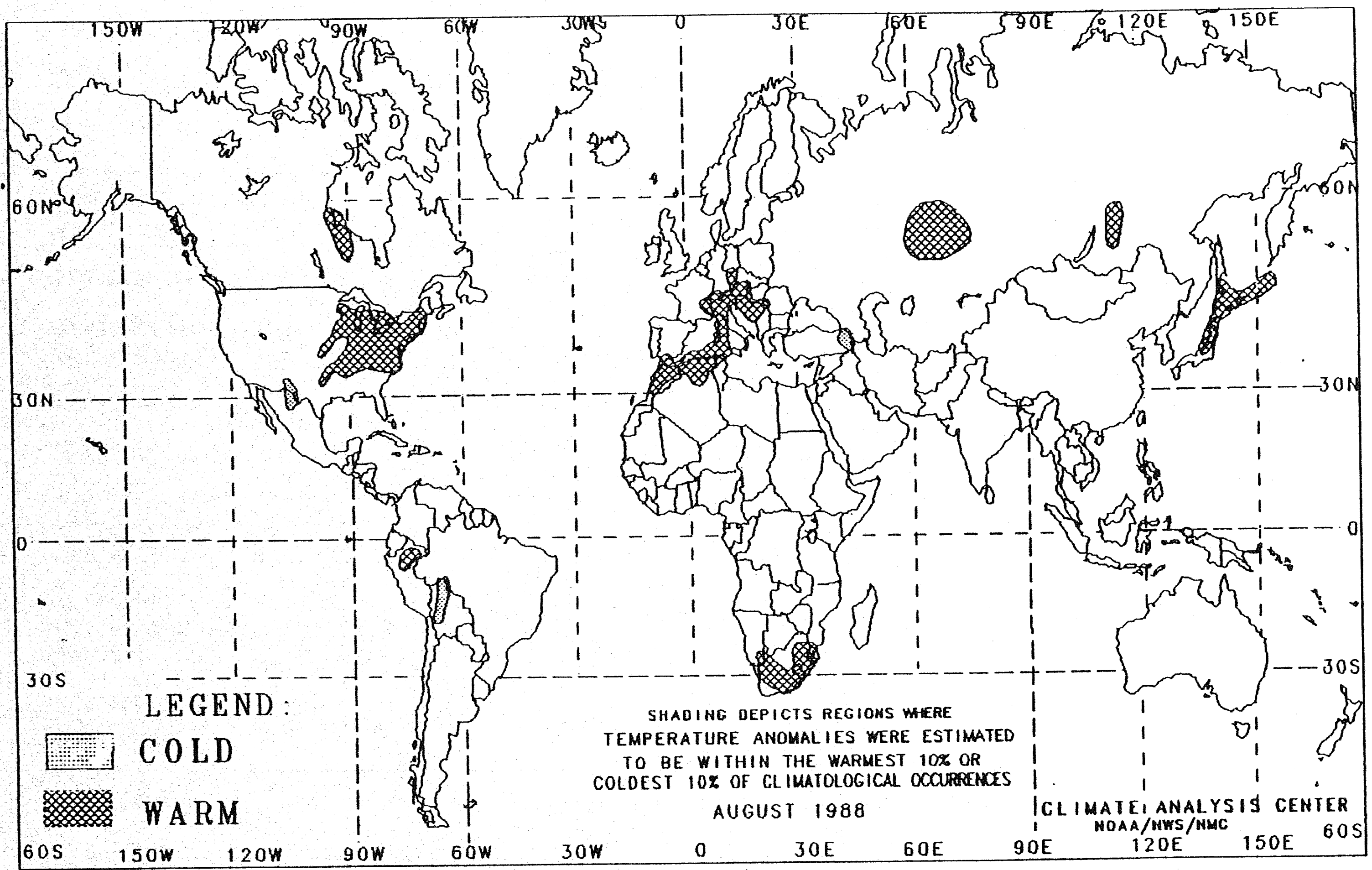
In climatologically arid regions where normal precipitation for the four week period is less than 20 mm, dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total four week precipitation exceeds 50 mm.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, south-western Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data is insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of four week precipitation anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

GLOBAL TEMPERATURE ANOMALIES

1 Month



The anomalies on this chart are based on approximately 2500 observing stations for which at least 26 days of temperature observations were received from synoptic reports. Many stations do not operate on a twenty-four hour basis so many night time observations are not taken. As a result of these missing observations the estimated minimum temperature may have a warm bias. This in turn may have resulted in an overestimation of the extent of some warm anomalies.

Temperature anomalies are not depicted unless the magnitude of temperature departures from normal exceeds 1.5°C.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data is insufficient for determining precentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of one month temperature anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.